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Platone

PLATform for Operation of distribution NETworks

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D8.6

**Summary of Platone
contribution to BRIDGE
WGs**



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Abstract

Platone's alignment with EU initiatives on demand-side flexibility and market regulations is evident. Participation in BRIDGE has proven invaluable, offering structured discussions beyond the project's scope. BRIDGE's framework ensures resource-efficient dialogues. Communication about BRIDGE engagement and capacity is pivotal. This engagement has fostered collaborations like the successful FlexCommunity with FEVER and edgeFlex. Workshops under H2020 ES-1-2019 have facilitated knowledge exchange. Beyond BRIDGE, Platone collaborates with projects like BD4NRG, BRIGHT, and Store&Go, showcasing its impact. Synergies with EUniversal and Platoon led to workshops and shared advisory board involvement. The Stakeholder Characterization Survey offered interesting insights beyond BRIDGE. Collaboration with EIRIE for Energy Communities showcases commitment of the project consortium. Platone leverages BRIDGE and collaborations for impactful outcomes. This initiative extends project results, shaping future endeavours and fostering an enduring cycle of progress and collaboration.

Keyword list

BRIDGE Initiative, Regulations, Data Management, Business Models, Consumer and Citizen Engagement, HEMRM, Use Case Repository, Stakeholder Characterization, EIRIE, knowledge exchange, FlexCommunity

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Executive Summary

“Innovation for the customers, innovation for the grid” is the vision of project Platone - Platform for Operation of distribution Networks. Within the H2020 programme “A single, smart European electricity grid”, Platone addresses the topic “Flexibility and retail market options for the distribution grid”. Modern power grids are moving away from centralised, infrastructure-heavy transmission system operators (TSOs) towards distribution system operators (DSOs) that are flexible and more capable of managing diverse renewable energy sources. DSOs require new ways of managing the increased number of producers, end users and more volatile power distribution systems of the future. Platone is using blockchain technology to build the Platone Open Framework to meet the needs of modern DSO power systems, including data management. The Platone Open Framework aims to create an open, flexible and secure system that enables distribution grid flexibility/congestion management mechanisms, through innovative energy market models involving all the possible actors at many levels (DSOs, TSOs, customers, aggregators). It is an open source framework based on blockchain technology that enables a secure and shared data management system, allows standard and flexible integration of external solutions (e.g. legacy solutions), and is open to integration of external services through standardized open application program interfaces (APIs). It is built with existing regulations in mind and will allow small power producers to be easily certified so that they can sell excess energy back to the grid. The Platone Open Framework will also incorporate an open-market system to link with traditional TSOs. The Platone Open Framework will be tested in three European field trials.

The guiding philosophy of Platone seamlessly aligns with ongoing EU initiatives centred around demand-side flexibility and parallel market regulatory developments. Within the project’s work package on dissemination and exploitation, one task is explicitly on Contribution to European Joint Research, Development and Innovation efforts. One of the main subtasks in this regard is contributing to the working groups of BRIDGE, an initiative of the European Commission /Directorate-General Energy which unites the broad Smart Grid and Energy Storage Projects funded under the Horizon 2020 Programme to create a structured view of cross-cutting issues which are encountered in the demonstration projects and may constitute an obstacle to innovation.

Despite its modest scale, Platone derives significant value from its participation in the BRIDGE initiative, which offers a structured avenue for in-depth discussions that often surpass the project’s original scope. The structured approach of BRIDGE, characterized by regular meetings and focused input solicitations, ensures efficient resource utilization and facilitates purposeful dialogues. Looking ahead, effective communication of BRIDGE involvement should encompass both the working group’s expectations and the project’s internal capacity. This engagement within BRIDGE has paved the way for a range of collaborative prospects within the community. Notably, the establishment of the FlexCommunity alongside sister projects FEVER and edgeFlex has yielded successful annual conferences and garnered participation from over 150 members. Collaborative efforts within the context of H2020 call on “Flexibility and retail market options for the distribution grid” (ES-1-2019) have led to informative workshops and meaningful knowledge exchange. Beyond the confines of BRIDGE, Platone has actively engaged with other projects, including BD4NRG, BRIGTH, and STORE&GO. These collaborations have yielded multi-project contributions and the scaling up of models, demonstrating the project’s commitment to widespread impact. Additionally, synergies with projects such as EUniversal and Platoon have manifested in technical workshops and mutual involvement in advisory boards. One noteworthy outcome is the Stakeholder Characterization Survey, an accomplishment of the BRIDGE Citizen and Consumer Engagement Working Group, which has transcended the boundaries of the BRIDGE network to offer valuable insights into the dynamics of engagement within the flexible energy system. Moreover, Platone has taken part in crafting a knowledge platform for Energy Communities, collaborating closely with the European Interconnection for Research Innovation & Entrepreneurship (EIRIE) platform, which sets the stage for future cooperative endeavours.

As the BRIDGE initiative progresses, it holds the promise of not only effectively consolidating project outcomes through BRIDGE but also of extending the enduring availability of these results to inform and shape forthcoming initiatives, fostering a continuous cycle of progress and collaboration.

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1 Introduction

The project “PLATform for Operation of distribution Networks – Platone” aims to develop an architecture for testing and implementing a data acquisition system based on a two-layer Blockchain approach: an “Access Layer” to connect customers to the Distribution System Operator (DSO) and a “Service Layer” to link customers and DSO to the Flexibility Market environment (Market Place, Aggregators, ...). The two layers are linked by a Shared Customer Database, containing all the data certified by Blockchain and made available to all the relevant stakeholders of the two layers. This Platone Open Framework architecture allows a greater stakeholder involvement and enables an efficient and smart network management. The tools used for this purpose will be based on platforms able to receive data from different sources, such as weather forecasting systems or distributed smart devices spread all over the urban area. These platforms, by talking to each other and exchanging data, will allow collecting and elaborating information useful for DSOs, transmission system operators (TSOs), Market, customers and aggregators. In particular, the DSOs will invest in a standard, open, non-discriminatory, blockchain-based, economic dispute settlement infrastructure, to give to both the customers and to the aggregator the possibility to more easily become flexibility market players. This solution will allow the DSO to acquire a new role as a market enabler for end users and a smarter observer of the distribution network. By defining this innovative two-layer architecture, Platone strongly contributes to aims to removing technical and economic barriers to the achievement of a carbon-free society by 2050 [1], creating the ecosystem for new market mechanisms for a rapid roll out among DSOs and for a large involvement of customers in the active management of grids and in the flexibility markets. The Platone platform will be tested in three European trials (Greece, Germany and Italy). The Platone consortium aims to go for a commercial exploitation of the results after the project is finished. Within the Horizon 2020 (H2020) programme “A single, smart European electricity grid” Platone addresses the topic “Flexibility and retail market options for the distribution grid”.

It is essential that society benefits from the investment in H2020 projects. Therefore, there is a clear emphasis on the beneficiaries’ obligations to exploit and disseminate the outcomes of the funded activities [2] [3]. To meet this obligation, a transverse work package (WP) on dissemination and exploitation – WP8 – was designed. The main objective of this work package and its related tasks is to maximise the scientific, industrial and societal impact of Platone by organising its engagement with a broad range of stakeholders. Within WP8, the task 8.5 is explicitly on Contribution to European Joint Research, Development and Innovation (RDI) efforts. In this regard, contribution to the Working Groups (WGs) of the BRIDGE initiative is one the main subtasks of task 8.5. BRIDGE is a European Commission (EC)/Directorate-General Energy (DG ENER) initiative which unites the broad Smart Grid and Energy Storage Projects funded under the H2020 Programme to create a structured view of cross-cutting issues which are encountered in the demonstration projects and may constitute an obstacle to innovation [4]. The BRIDGE community is composed of energy system stakeholders, such as consumers representatives, grid operators, regulatory experts, local energy communities’ representatives, power technology providers, energy suppliers, research and innovation experts, energy system integration experts from the European Technology and Innovation Platform Smart Networks for Energy Transition (ETIP SNET) [5].

The BRIDGE initiative is structured with the four permanent WGs of Data Management, Business Model, Regulation and Consumer, and Citizen engagement (CCE), charged with preparing reports and formulating recommendations for the EC on various themes linked to the future of the energy sector [6]. In the WGs, temporary working formats like Task Forces and Actions, subgroups and topic groups can be formed. Besides that, crosscutting complementary Task Forces have been launched after the 2019 BRIDGE General Assembly to work on specific topics: Energy Communities, Replicability/Scalability Analysis and Joint Communication. Two topics are being studied in the present period: Cybersecurity and TSO-DSO cooperation.

This deliverable provides a comprehensive report on the significant contributions made by Platone to the BRIDGE initiative.

1.1 Associated Tasks

The main task in the context of Platone’s contribution to the BRIDGE WGs is task 8.5: “Contribution to European Joint RDI efforts”. Task 8.5 is about the contribution to the activities of the four permanent

WGs, their subgroups, Actions, WG related and cross-cutting Task Forces as well as to BRIDGE events and joint dissemination activities.

The following deliverables addressing the contribution to the BRIDGE WGs have been submitted so far:

- Four editions of the deliverable “Communication and Dissemination Plan” D8.1, D8.7, D8.8 and D8.9
- D8.4 “Intermediate report on the stakeholder engagement, exploitation, dissemination, communication and standardization activities”

1.2 Objectives of the Work Reported in this Deliverable

This deliverable provides a comprehensive report on the significant contributions made by Platone to the BRIDGE initiatives WGs. The primary goal of this work was to maximize the scientific, industrial, and societal impact of the Platone project by effectively sharing information and knowledge and transferring the experiences gained with the BRIDGE community, a key stakeholder group for Platone. Engaging with BRIDGE opens up opportunities for collaboration, synergies, and support for crucial steps towards future exploitation. Sharing the experiences and outcomes of projects at the BRIDGE level allows for more effective integration, leading to a heightened level of knowledge sharing and generation. Additionally, being a part of BRIDGE increases the possibility of the project results being available for extended periods, which can contribute to shaping future projects, initiatives, and programs.

1.3 Outline of the Deliverable

The introduction to this deliverable can be found in chapter 1, which sets the context for the report.

Chapter 2 comprehensively covers all the contributions made to BRIDGE. The chapter is organized into four main sections, each corresponding to the working groups and their respective subgroups, Actions, or Task Forces. Additionally, it includes crosscutting Task Forces and details contributions to other BRIDGE activities, such as BRIDGE events and joint dissemination efforts.

Chapter 3 presents the conclusion of the work conducted.

1.4 How to Read this Document

This deliverable provides a complete overview on the contributions the Platone consortium partners have made to the BRIDGE initiative during the project lifetime.

Most of these activities have been accompanied by further activities being reported in BRIDGE reports and documents. For an in-depth understanding of the work done, these documents are referred to for further information in this deliverable.

For some of the contributions, there are no reports available and no other relevant Platone deliverable was planned until the Platone project ends in August 2023. This concerns in particular the analysis of the Stakeholder Characterization Survey as part of the work in the BRIDGE CCE WG (see chapter 2.2.4.2). Therefore, the interim analysis of the survey is outlined in this deliverable for the sake of completeness of the Platone contributions.

2 Contribution to BRIDGE

Several partners of the Platone project have been actively involved in the activities of BRIDGE contributing to the work of the WGs and providing input to the BRIDGE reports and documents. This synergy ensured that the main findings of the project are transferred in the documents that are elaborated within BRIDGE.

In total 19 consortium members participated in BRIDGE WGs and associated Actions and Task Forces during the project lifetime.

In addition, project partners were active in a leading role for BRIDGE: Platone project coordinator Prof. Antonello Monti, RWTH was the Co-chair of the crosscutting Task Force on Future Research and Innovation priorities (see chapter 2.3.1), Ercole de Luca, Areti led, within the WG Regulations, the Action “Harmonised Electricity Market Role Model (HEMRM)” (see chapter 2.2.3.2) , Ludwig Karg, B.A.U.M., was the Co-Lead of the crosscutting Task Force on Energy Communities (see chapter 2.3.2) and Andreas Corusa led, within the CCE WG, the topic group on Stakeholder Characterization (see chapter 2.2.4.2).

The following subchapters report in detail on the contributions made in the respective WGs, subgroups and topic groups, Actions, WG’s and crosscutting Task Forces as well as to BRIDGE events and joint dissemination activities.

2.1 Project Representatives

The table below lists the members of Platone involved in the BRIDGE initiative.

Last name	First name	Organisation	Working Group /role
Bertoncini	Massimo	Engineering	Data Management, Business Models / member
Bosco	Ferdinando	Engineering	Data Management / member
Carrano	Renata	Areti	Regulations / member
Chelli	Alessandro	APIO	Business Models / member
Corusa	Andreas	B.A.U.M	CCE / member Member Subgroup Stakeholder strategies / Lead topic-group Stakeholder characterization (2022 – 2023)
De Luca	Ercole	Areti	Regulations / member, leader of Action “Harmonised Electricity Market Role Model – HEMRM”
Fedele	Gabriele	Areti	Regulations / member
Glennung	Kirsten	E.DSO	Regulations / member
Giovanett	Sophia	E.DSO	Regulations / member
Haas	Manuel	B.A.U.M	CCE / member Lead topic-group Stakeholder categorization (2022) Member Subgroup Stakeholder strategies / Lead topic-group Stakeholder characterization (2022)
Karg	Kilian	B.A.U.M.	CCE / member

Last name	First name	Organisation	Working Group /role
			Co-lead topic group Stakeholder categorization (2022)
Karg	Ludwig	B.A.U.M	CCE / member; Co-Lead Taskforce Energy Communities; Communications for HEMRM
Losa	Ilaria	RSE	Data Management / member
Mantineo	Antonio Vito	Areti	Regulations / member
Mirz	Markus	RWTH	Data Management / member
Monti	Antonello	RWTH	Data Management / member, Co-chair of the Task Force on Research and Innovation priorities
Petersen	Kristin	B.A.U.M	TF Joint Communication / member
Petters	Benjamin	AVACON	Regulations / member
Stetter	Anna	B.A.U.M	CCE / member

2.2 Contribution to BRIDGE Working Groups

2.2.1 Contribution to BRIDGE WG Data Management

Project participants: Antonello Monti, Markus Mirz (RWTH), Massimo Bertoncini, Ferdinando Bosco (ENG), Iliara Losa (RSE)

Time period: 2019 - 2023

The BRIDGE Data Management WG aims to cover a wide range of aspects ranging from the technical means for exchanging and processing data between interested stakeholders to the definition of rules for exchange including security issues and responsibility distribution in data handling [7]. The WG in 2023 is working on:

- Communication Infrastructure, embracing the technical and non-technical aspects of the communication infrastructure needed to exchange data and the related requirements, including issues faced by TSO and DSO;
- Cybersecurity and Data Privacy, entailing data integrity, customer privacy and protection;
- Data Handling, including the framework for data exchange and related roles and responsibilities, together with the technical issues supporting the exchange of data in a secure and interoperable manner, and the data analytics techniques for data processing.

Platone consortium partners have been involved particularly in the

- WGs work on Data Exchange Reference Architecture (see chapter 2.2.1.1)
- Task Force on Common Information Model (CIM) applications (see chapter 2.2.1.2)
- Action “Set up a use case repository” (2020 – 2022) (see chapter 2.2.1.3)
- Action “Interoperability of flexibility assets” (see chapter 2.2.1.4)

2.2.1.1 Work on Data Exchange Reference Architecture

Project Participants: Antonello Monti (RWTH), Massimo Bertoncini (ENG)

Time period: 2020 - 2022

The work on Data Exchange Reference Architecture covered issues related to organising energy data exchanges on European level. This included identifying high-level reference architecture, information modelling and role modelling. It is a natural follow-up step to the previous BRIDGE study which investigated data management aspects of TSO-DSO coordination. The BRIDGE Data Management WG recognizes and is willing to contribute to the ongoing activity of EC to deliver ‘data interoperability implementing acts’ as mandated in articles 23 and 24 of electricity market directive [2019/944].

Within the Task Force on Data Architecture, Platone contributed to the definition of the architectural picture that has been presented at the BRIDGE General Meeting 2021.

The work resulted in reports, “European energy data exchange reference architecture (April 2021) [8] and “Interoperability of flexibility assets 2.0: Data Management Working Group” (May 2022) [9].

2.2.1.2 Task Force on Common Information Model application

Project Participants: Ilaria Losa (RSE)

Time period: 2020 - 2022

Within the Task Force on CIM application, Platone participated to the preparation and processing of the analysis of the use of the CIM standard within the H2020 projects.

The work has been summarized in the report “Contribution from BRIDGE projects to standardisation: Data Management Working Group, published in May 2022 [10].

2.2.1.3 Action “Set up a Use Case Repository”

Project Participants: Antonello Monti (RWTH), Massimo Bertoncini (ENG)

Time period: 2020 - 2021

Following work performed by WG Data Management in the TSO-DSO report [12] and discussions held during the BRIDGE General Assembly in February 2020 [38], the need of an easily accessible use-case repository has been identified in the WG Data Management. Therefore, the Action “Set up a use case repository” was formed.

Within this Action which started in spring 2020, Platone proposed a new approach to the creation of a database of use cases to support the BRIDGE goal to create a European repository of all the use cases to facilitate the exchange of knowledge among projects. Platone developed as part of its work a totally open-source toolchain that makes this repository possible. The Data Management WG adopted the solution as a standard [14]. Platone is still supporting the advancement of the tool and the creation of new features. There was an agreement that this solution shall become the standard for all Horizon projects accompanied by contributions from all projects to this repository. The repository, finally named “Smart Grid Use Case Repository” is available online under the web address “smart-grid-use-cases.github.io” [16].

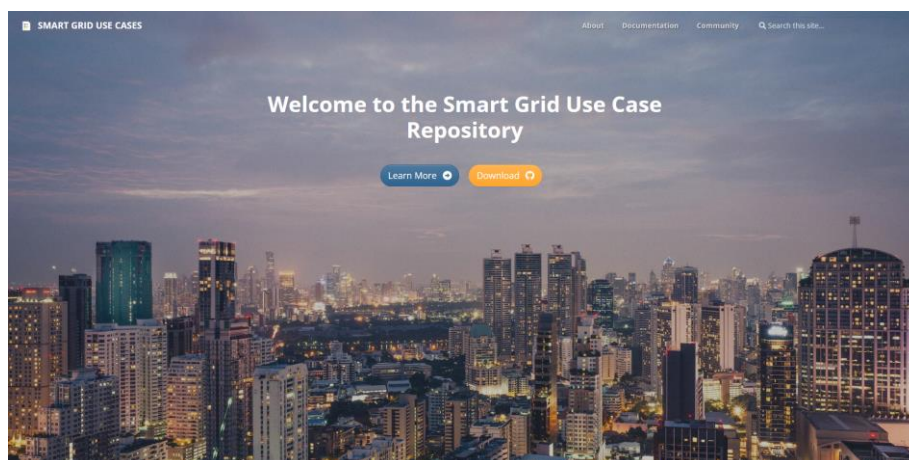


Figure 1: Homepage of the Smart Grid Use Case Repository

The latest BRIDGE Report on the Action on the Use Case Repository released in May 2022 reports on pursuing the initiatives undertaken within the Action and describes the continuation of activities aimed at the development of a use case repository, in particular, the status of the repository, next steps and conclusions, including information about the potential integration of the repository with other platforms [17].

2.2.1.4 Action “Interoperability of Flexibility Assets”

Project participants: Antonello Monti, Massimo Bertoncini, Ferdinando Bosco

Time period: 2021 to 2023

During the BRIDGE General Assembly 2020 [13], one of the conclusions was to work on the “Interoperability of flexibility assets”, with the objectives to enable interoperability of flexibility assets by maintaining a set of recommendations, best practices and possibly tools.

Within the Action titled as Action “Interoperability of Flexibility Assets” from 2020 to 2023 Platone contributed on defining the Reference Framework and Generic Business Processes for enabling interoperability of the flexibility assets. The extensive work carried out from 2020 to 2022 resulted in a list of six findings and recommendations, mapped to the areas of the Digitalisation of Energy Action Plan, under development by the EC. The report produced in 2022 by the Data Management Working Group offers updates on the development of Action “Interoperability of Flexibility Assets” [9].

The Action on Interoperability of Flexibility Assets continued its work in 2023 with specific activities for the definition of the settlement sub-process. Platone project supported the Action providing the description of the settlement phase implemented in the Italian Demo, answering to specific survey, and indicating the development level, the actors involved, the used tools and kind of data exchanges. The final report produced in 2023 by the Data Management WG includes, among others, the settlement process implemented within Platone. The draft of the report was presented at the BRIDGE GA 2023, the report will probably be published in the last quarter of 2023.

2.2.2 Contribution to BRIDGE WG Business Models

Project participants: Massimo Bertoncini, Alessandro Chelli

Time period: 2021 - 2022

The aim of the BRIDGE WG on Business Models is:

- Defining common language and frameworks around business model description and valuation.
- Identifying and evaluating existing and new or innovative business models from the project demonstrations or use cases.
- The development of a simulation tool allowing for the comparison of the profitability of different business models applicable to smart grids and energy storage solutions is being developed and tested by the Working Group members [18].

When the Platone project started in autumn 2019, this WG has been inactive since mid-2019 until 2021 as the main activities from the previous period were completed [19]. The need to reactivate the WG was identified during the BRIDGE General Assembly in March 2021 in the Parallel Session 6 – BUSINESS MODELS. A high level of interest expressed by many of the new BRIDGE projects highlighted the necessity for reestablishing this particular WG. This is due to the increasing number of new BRIDGE projects that focus on the business-, economic- and general value-oriented aspects of the services and activities being pursued [19].

The relaunched WG started the work in September 2021. The projects participating were grouped into three tasks:

- Task 1 aimed to zoom into concrete business models, related barriers to realize them and trend that may impact them.
- Task 2 investigated best practice for use cases monitoring and impact analysis and the role of Key Performance Indicators.
- Task 3 complemented and validated Task 1 and Task 2 activities with the help of a questionnaire to all participating projects.

Platone consortium members joined this WG from 2021 on and shared Platone experiences and insights within the WG were appropriate. The work in the Tasks resulted in a report “Investigation of relationship of Use Cases and cross-domain Business Models” [20] and was discussed in a dedicated session at the BRIDGE GA in 2022.

2.2.3 Contribution to BRIDGE WG Regulations

Participants: Ercole De Luca, Renata Carrano, Gabriele Fedele, Mantineo Antonio Vito (Areti), Sophia Giovanett, Kirsten Glennung (E.DSO), Benjamin Petters (Avacon)

Time period: 2019 – 2023

The BRIDGE WG Regulations [21] was established with the objective of fostering knowledge sharing among H2020 projects affected or addressed by different regulatory aspects in the energy domain. This WG is continuously looking for synergies with other BRIDGE WGs and other WGs outside BRIDGE (e.g., ISGAN, ETIP SNET). The BRIDGE Regulatory WG defines most important regulatory challenges to be addressed, proposes best practices from the BRIDGE projects and formulates recommendations for policy makers.

Particularly the following topics are addressed [21]:

- Communication Infrastructure, embracing the technical and non-technical aspects of the communication infrastructure needed to exchange data and the related requirements, including issues faced by TSO and DSO
- Cybersecurity and Data Privacy, entailing data integrity, customer privacy and protection
- Data Handling, including the framework for data exchange and related roles and responsibilities, together with the technical issues supporting the exchange of data in a secure and interoperable manner, and the data analytics techniques for data processing

This WG worked on several different Tasks and Actions since the Platone project started in 2019. Platone has as well contributed particularly to the Task related to creating a common taxonomy for services, products, and markets. The support to the taxonomy for what concerns the Smart Grid Architecture Model (SGAM) analysis was given in connection to the work within the Platone Task 1.1 “Use case definition and operation specifications” and the Platone deliverable D1.1 “General Functional Requirements and specifications of joint activities in the Demonstrators” and was concluded in September 2020. The contribution was coordinated by E.DSO with the inputs especially from the consortium partner and leader of the Italian Demo, Areti.

Platone consortium partner E.DSO coordinated the Platone contributions into Regulation WG concerned mainly the Actions titled until 2021 under Action “Service Provision by Energy Communities” and Action “Local markets”. For both Actions there has been specific input based on the lessons learned in Platone to the papers coordinated by the BRIDGE WG leaders. Presentations on these two topics were also provided during their respective workshops of the WG.

Benjamin Petters from consortium partner Avacon served as contributor in a workshop to share expertise on German legislation and regulation on energy communities in distribution networks. Further, he shared experience from the implementation of an energy management system to implement collective self-consumption in the public distribution network, reported results on generation and consumptions characteristics of the trial community, presented and discussed lessons learned from use case application.

Above that Platone consortium partners have been involved particularly in the following Actions, outlined in two following chapters:

- Action “Synergies between demos (ID Cards)” (see chapter 2.2.3.1)
- Action “Harmonized Electricity Market Role Model” (HEMRM) (see chapter 2.2.3.1).

2.2.3.1 Action “Synergies between demos (ID Cards)”

Participants: Ercole De Luca, Renata Carrano (Areti)

Time period: 2020 - 2021

The Action “Synergies between demos (ID Cards)” aimed to initiate a common repository of information on demo sites using generic demo ID cards which were developed within this action. The ID cards were designed based on discussions and experiences from the members of the Regulation WG and provided information on development of demo sites, their assets and expected outcomes. Platone has contributed to the report “Synergies between demos – ID Cards Regulation & Data Management Working Groups”, published in April 2021 [24].

2.2.3.2 Action “Harmonized Electricity Market Role Model” (HEMRM)”

Project Participants: Ercole De Luca (Areti)

Time period: 2020 to 2021

In May 2020, the BRIDGE WG on Regulation started a new action – Action “Harmonized, Electricity Market Role Model (HEMRM)”. The goal was a common understanding of an electricity market model according to the new provisions of the “Clean energy for all Europeans package” [23] between related EU projects, the BRIDGE initiative, the system operator’s associations, citizen energy communities and the EU institutional bodies like the EC, Agency for the Cooperation of Energy Regulators (ACER) and Council of European Energy Regulators (CEER).

Platone was assigned the lead of this ambitious scheme. Under the leadership of Ercole de Luca from Platone partner Areti and with the involvement of the Platone project management team, an updated version of the HEMRM originally prepared by ENTSO-E was developed. After several months of work of the joint team between ENTSO-E - ebIX - EFET, EU BRIDGE Program and European DSO Associations, the final version of the “EU BRIDGE HEMRM Differential Analysis” was sent to the EC in November 2021 for their final approval [24]. The document reports, in its first part, the vision of EU BRIDGE projects about the needs of update of the HEMRM, and in its second part, the results of sharing this view with ENTSO-E - ebIX - EFET representatives. The document was intended to be a picture of the analysis and the discussions about the possible impact of local / distributed flexibility services on the HEMRM, aiming to be useful for future developments and implementations. The Action on HEMRM was closed in November 2021.

2.2.3.3 Action “Local Markets”

Project participants: Kirsten Glennung and Sophia Giovanett (E.DSO)

Time period: 2021 - 2022

The goal of the Action titled as Action “Local Markets” from 2021 until 2022 was to serve as a dynamic knowledge sharing platform among H2020 projects to provide guidelines for the implementation of Local Markets in terms of identification of the needed services, the set-up of market phases (i.e., activation, bidding, clearing and settlement), and the definition of the Local Markets structure and participants roles.

As part of the Action on Local Markets, E.DSO coordinated the submission of Platone to a questionnaire aimed at collecting information on Local Markets implementation in the project’s pilots. The input provided focused on the Italian Demo of Platone, and the local flexibility market tested in Rome. An overview of the current regulatory framework in Italy was provided together with a description of the structure, roles and delivery mechanisms envisioned in the Italian Demo. An analysis of the remaining regulatory barriers to Local Markets implementation was also carried out and provided in response to the questionnaire.

Thanks to the provided inputs and the participation in the Action’s workshop “Dynamic Knowledge Sharing on Local Markets Implementation”, held in January 2022, Platone contributed to the formulation of lessons learnt and recommendations from the Action included in the “BRIDGE Annual Report 2021 – WG Regulation” [22].

2.2.4 Contribution to BRIDGE WG Consumer and Citizen Engagement

Project participants: Ludwig Karg, Andreas Corusa, Manuel Haas, Kilian Karg, Dr. Anna Stetter

Time period: 2020 - 2023

The CCE WG, previously Consumer Engagement, aims at creating a structured cross-cutting understanding of the role and methodologies of engagement in European Research and Innovation projects [26] [27].

During the lifetime of Platone, between 2019 and 2023, the CCE WG was structured in different subgroups, each tackling a piece of the framework of consumer and citizen engagement.

In 2020, the work of the CCE WG was divided in five subgroups:

1. Socioeconomic Drivers of Engagement
2. Group Building
3. Governance and Organisational Models
4. Assessment (Indicators) of Engagement
5. Smart Tools for Engagement

During 2020, these subgroups explored their respective topics and identified gaps in knowledge and needs of European R&I projects regarding engagement. The conclusions and recommendations of this work were included in the CCE WG 2021 report [28]. Following this work, during 2021 and until the 2022 GA, the CCE WG focused on addressing the gaps identified in the report and merged two of the subgroups.

For 2021 therefore, four subgroups were formed:

- Socio economic drivers and indicators of engagement
- Strategies of Engagement
- Governance models for collective action
- Smart tools for engagement

From 2022 onward and as agreed at the BRIDGE GA 2022 [29], the work of this WG was divided in three subgroups, each providing insights on the multifaceted, complex, and dynamic issue of engagement:

1. Indicators of engagement
2. Strategies of engagement
3. Smart tools for engagement

Platone contributed to all subgroups of CCE WG but with particular focus on the “Socio economic drivers and indicators of engagement” and “strategies on engagement” which were respectively active in 2021-2022 (see chapter 2.2.4.1) and 2022-2023 (see chapter 2.2.4.2).

Above that, within this WG, B.A.U.M. supported the organization of social events such as the Christmas event, in which a virtual role play community was created in “spatial” to get in exchange and know each other more personally.

2.2.4.1 Subgroup Drivers and Indicators of Engagement

Project participants: Manuel Haas, Kilian Karg (B.A.U.M.)

Time period: 2020 - 2021

To gather information from the BRIDGE projects, the CCE WG decided to send out a questionnaire covering each of the research areas of all subgroups of the CCE WG to identify H2020-projects with a focus on customer engagement [30]. Platone consortium partners contributed to the design and methodology of the questionnaire.

Particularly, B.A.U.M. prepared a “stakeholder characterization template” which described stakeholder types according to the following criteria:

- description of tasks and activities
- possible roles in the technical or market system
- major drivers to actively participate and promote energy transition
- how to contact, motivate, and activate
- definition of parameters for engagement strategies
 - Technical
 - Market

- Regulation
- Degree of activation
- types of contribution to use case (e.g. active/passive, market, technical)
- artefacts developed in Platone, which affect the stakeholder directly (e.g. hardware or software, new tariff or business offerings)
- other experience from the engagement process
- appearing in following use-cases per trial
- source of information (to fill the template)
- relevant for Platone WPs
- elements for depiction (technical / personal)

The template was circulated within the subgroup and accordingly was filled out. It was also shared with the projects in BRIDGE.

Moreover, Kilian Karg and Manuel Haas from partner B.A.U.M as Platone representatives contributed exclusively by participating in the questionnaire itself, answering the questions with broad experience from the project work. Additionally, the Platone Demo representatives filled out the survey and contributed to the respective CCE WG. For the final conclusion, Kilian Karg and Manuel Haas were interviewed as representatives of Platone for more detailed feedback about experiences and lessons learned from engagement activities within the project [30].

2.2.4.2 Subgroup Strategies of Engagement

Participants: Andreas Corusa, Manuel Haas (B.A.U.M.)

Time period: 2022 - 2023

The Strategies of Engagement subgroup aims to identify and assess strategies used by projects participating in BRIDGE initiative to engage citizens and consumers into the design and use of new energy technologies, to participate into collective action in the energy domain as active consumers and prosumers, and to engage in mutual learning [30]. During 2022, the subgroup focused in three jointly defined themes working in three “topic groups”, namely “effective strategies of engagement”, “stakeholder characterization”, and “gender and inclusive engagement”. These topics build upon to the findings and recommendations made in the annual report 2022 [30].

Within the subgroup on strategies of engagement, partner B.A.U.M. and further Platone representatives have been paving the path for a process developing a coherent and coordinated definition of stakeholder types and their possible roles and parameters for engagement. From 2022 onward, B.A.U.M. leads the topic group 2 “Stakeholder characterization” which is closely connected with topic group 1 “Effective strategies for engagement” to secure development, adaption, and alignment of the stakeholder characterization.

2.2.4.2.1 Topic Group Stakeholder Characterization Survey

B.A.U.M. was leading the topic group Stakeholder Characterization from 2022 to 2023. In this group, eight meetings were organized to develop and track a survey investigating the experiences of a big variety of stakeholder types (> 200 logical combinations) and their engagement in the flexible energy system. The survey was conducted from October 2022 until July 2023. This quite long period was necessary to be able to gather enough responses for such a holistic approach.

Methodology and Goals

This online survey took a diverse approach compared to many other surveys:

- It gave the respondents the possibility to define their own stakeholder types (from here on called “personas”) with two different attributes. Examples can be seen in Table 1.
- The handling of the answers was designed as a drag-and-drop system to improve usability, allowing for the respondent to answer one question for many stakeholder types at once.
- The survey described and categorized experiences. No scoring system was implemented.
- The observed quantitative results were qualitatively evaluated.

The survey is comprised of two major parts, the contextual part addressing the respondents directly and gathering data about them and the main part, the persona characterization. The goal of the survey was

to learn, through detailed characterizations of personas, which attributes can describe those personas. With this, B.A.U.M tried to look behind the organizational affiliation and gain the knowledge needed to help developing better stakeholder engagement strategies as well as generally understand stakeholders better. This was one of the main overall goals of the WG on Consumer and Citizen Engagement. The survey was addressed to all people who have been involved in or interacted with the topic of flexible energy systems, as well as those stakeholders currently active in the energy system, i.e., industries, researchers, politicians as well as individuals in Europe and beyond. In the following paragraph Data base and selection all the of the survey were analysed. This includes plotting the most characterized personas (5 were identified, see Table 1) which had the aim to create profiles of given personas comprised by two attributes, organisational affiliation and specific position in this organisation. The personas were then analysed and compared for each question.

Data base and selection

As of end of July 2023, the online survey has over 500 characterized personas (stakeholder types) observed represented through 100 valid survey responses. The valid responses serve as the basis of the following analysis. In general, it took respondents an average of 18 minutes to complete the survey (± 8 min) while each respondent characterized 5,2 stakeholder types on average. Given the amount of stakeholders per respondent, we can see that most respondents had various interactions with stakeholders in the flexible energy system which they were willing to share. Figure 2 shows that most respondents characterized 9 personas which was unexpectedly positive as 9 was the technical maximum of the survey. It’s also important to note that out of 500 characterized personas only those with more than 8 responses were analysed while other personas were not put into account due to lack to representative data.

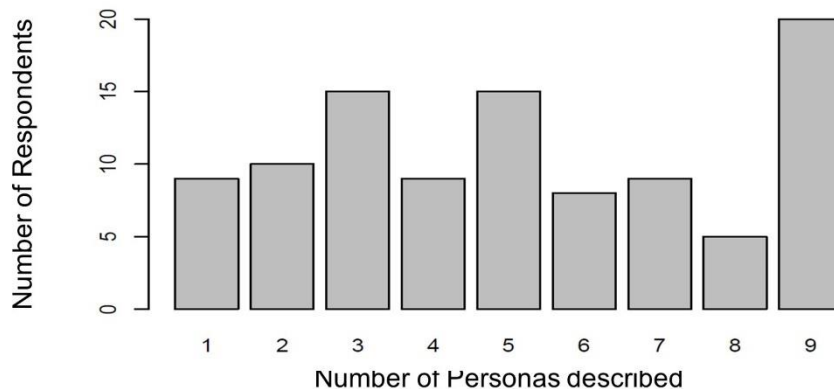


Figure 2: Number of described personas per respondent

Figure 3 shows the overall representation of the respondents and which organisation they are representing. 56% of respondents are “Supplier and Supporters” which includes particularly academia. It was to be expected that the majority of responses would come from this sector, considering that this project was formulated within an academic environment (BRIDGE) and primarily disseminated through scientific networks. 21% show “no description” which translates to “other” and encompassed fields such as communication, design, and various other companies that aren’t directly related to energy.

	N	frequency	percentage
Operator / utility (Transmission and distribution operators, trading, balancing)	100	10	0.10
Framework Setter (legislation body / national government, regulatory body, local administration / local authorities)	100	2	0.02
Actor in the Distributed System (Operator of generation plant / Virtual Power Plant / Energy Community, Aggregator, eMobility Service Provider)	100	8	0.08
Supplier and Supporter (academic institution, Non-Governmental Organisation, Service Provider, Energy advisory bodies/ institutions, Data Providers)	100	56	0.56
Private/ residential actor (consumer / prosumer, electric vehicle owner, Energy Community member)	100	12	0.12
[No Description] 06	100	21	0.21

Figure 3: Representation of organizations of respondents

Figure 4 shows the country representation of the survey respondents. Looking at the results, it was observed that people were slightly reluctant to provide this information due to overall less provided

answers for this question. Nevertheless, it’s important to show this graph as it clearly portrays the inclusion of many countries within Europe supporting the holistic idea of the survey.

	N	frequency	percentage	
Austria	78	8	0.10	
Belgium	78	1	0.01	
Bulgaria	78	1	0.01	
Croatia	78	2	0.03	
Cyprus	78	2	0.03	
Czech Republic	78	0	0.00	
Denmark	78	2	0.03	
Estonia	78	1	0.01	
Finland	78	4	0.05	
France	78	1	0.01	
Germany	78	23	0.29	
Greece	78	8	0.10	
Hungary	78	1	0.01	
Ireland	78	7	0.09	
Italy	78	9	0.12	
Latvia	78	3	0.04	
Lithuania	78	0	0.00	
Luxembourg	78	0	0.00	
Malta	78	0	0.00	
Netherlands	78	2	0.03	
Poland	78	2	0.03	
Portugal	78	1	0.01	
Romania	78	1	0.01	
Slovakia	78	0	0.00	
Slovenia	78	1	0.01	
Spain	78	13	0.17	
Sweden	78	1	0.01	
Switzerland	78	4	0.05	
[No Description]	28	78	12	0.15

Figure 4: Country representation of respondents

To be able to present the results of the survey in a comprehensible and simple way, we have taken only the five most chosen personas into consideration for our analysis, as shown in Table 1. For natural persons a category “Natural person / private homeowner / tenant” in which people without an organisational affiliation can be characterized was introduced. These stakeholder types we call – as mentioned before – “persona”.

Stakeholder Type (Persona)	Number of responses
Electrical Distribution System Operator (DSO) -> Technical Position	19
Natural person / private homeowner / tenant -> Residential consumer	18
Natural person / private homeowner / tenant -> Residential prosumer	16
Natural person / private homeowner / tenant -> Electric vehicle owner	8
Energy community operator -> Energy community member	8

Table 1: Overview of Stakeholder Types and Number of responses

Results

For a better data visualization, we have extracted only a few questions with their respective answers, while not showing answers that have been chosen by the lower 25th percentile for all analyzed

personas. This also helps to avoid a biased impact of singular answers with a relatively low number of respondents (see Table 1). For better understanding, we will name the above shown personas according to the bold markings.

In the following paragraphs, we will be evaluating major drivers and incentives to participate and promote flexibilities in the energy transition, the best communication means to engage with stakeholders, the barriers and hardships when engaging with stakeholders, as well as a comparison between the current and future tasks of the selected stakeholders.

Question 1: What are the major drivers/incentives of the stakeholder types to actively participate in and promote flexibilities for the energy transition?

Among 19 possible answers we extracted the 11 most significant answers (a threshold equal 0,25 or higher was chosen if at least one of the personas fulfils the requirement). The main drivers and incentives of the selected personas are represented in Figure 5 and listed below.

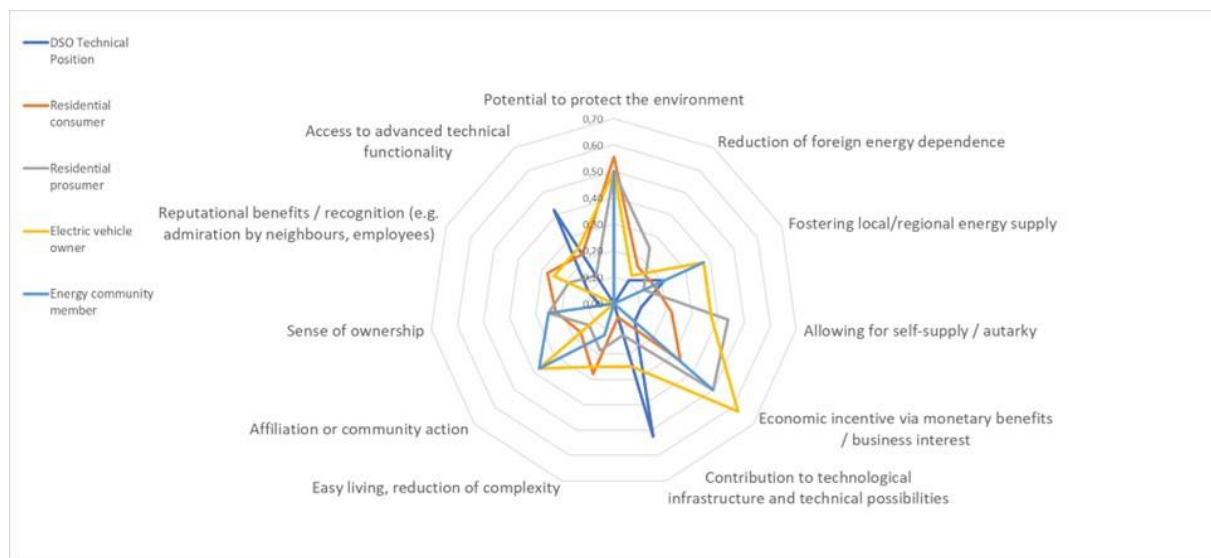


Figure 5: Major drivers and incentives of personas

- Motivations for the DSO Technical Position align with technical considerations. The most crucial factors include "Contribution to technological infrastructure" (53%) and "Access to advanced technical functionality" (42% agreement among respondents).
- Among Residential Consumers, the desire to "Protect the environment" (56%) stands out prominently, followed by the appeal of an "Economic incentive" (33%).
- Similar to Residential Consumers, the Residential Prosumer persona is significantly motivated by the "Potential to protect the environment" (50%) and the "Economic incentive" (50%). Additionally, the allure of "Allowing for self-supply/autarky" (44%) plays a role.
- For Electric Vehicle Owners, the primary driver is the "Economic incentive" (63%), closely followed by the aspiration to "Protect the environment" (50%). Other motivations include "Allowing for self-supply/autarky" (38%), "Fostering local energy" (38%), and "Affiliation or community action" (38%).
- Members of Energy Communities are equally driven by the "Economic incentive" and the "Potential to protect the environment," both at 50%. Additionally, "Affiliation or community action" and "Fostering local energy" hold significance, both at 38%.

Question 2: What are the best communication means for each stakeholder type?

Among 13 possible answers, we extracted the 11 most significant answers (a threshold equal 0,25 or higher was chosen if at least one of the personas fulfils the requirement). The best communication means of selected personas are represented in Figure 6 and listed below.

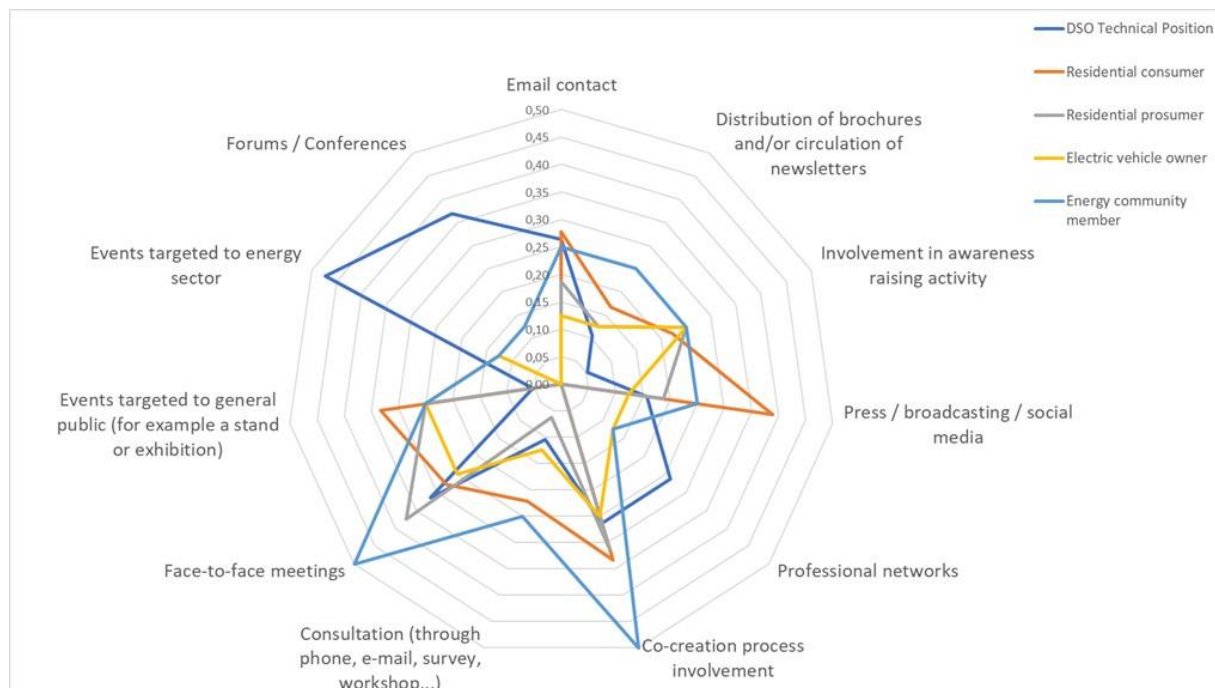


Figure 6: Best communication means of personas

- Connecting with the DSO Technical Position persona is most effective through "Events targeted to the energy sector" (47%) and "Forums / Conferences" (37%).
- For Residential Consumers, there were no very high relevance levels measured. The most important means of communication were "Press / broadcasting / social media" (39%), followed by "Co-creation process involvement" and "Events targeted to the general public (e.g., a stand or exhibition)" both at 33%.
- Similarly, Residential Prosumers showed even fewer high relevance levels. The most significant communication channels were "Face-to-face meetings" (38%) and "Co-creation process involvement" (31%).
- No significant relevance levels exceeding the threshold of 25% were observed among Electric Vehicle Owners.
- Energy Community Members found that "Co-creation process involvement" and "Face-to-face meetings," both at 50%, proved to be the most effective communication means.

Question 3: What are the barriers/ hardships of engagement for the stakeholder type?

Among 14 possible answers, we extracted the 9 most significant answers (a threshold equal 0,25 or higher was chosen if at least one of the personas fulfils the requirement). The most important barriers and hardships of selected personas are represented in Figure 7 and listed below.

The results show again that in general the focus areas were numerically not strongly manifested among the answers (overall low relevance levels). Some observations can still be made:

- Generally, the biggest barriers for the DSO Technical Position included "Regulatory gaps" (37%) and "Different ideas of implementation" (32%). It was also observed that relevance levels were quite low on average.
- Quite low relevance levels were observed across the panel of answers for Residential Consumers. The attribute with the highest importance was the "Lack of experience in the field" (28%).
- Similar to residential consumers, Residential Prosumers displayed results with low relevance levels, albeit slightly higher than consumers. The most important attribute was the "Lack of experience in the field" (31%).
- Electric Vehicle Owners exhibited very low relevance levels, resulting in minimal importance attributed to the attributes in general, such as "Regulatory gaps" (25%).

- Within the Energy Community Members group, significant barriers included the "Lack of experience in the field" (63%) as well as challenges stemming from "Bad / non-targeted communication" (38%).

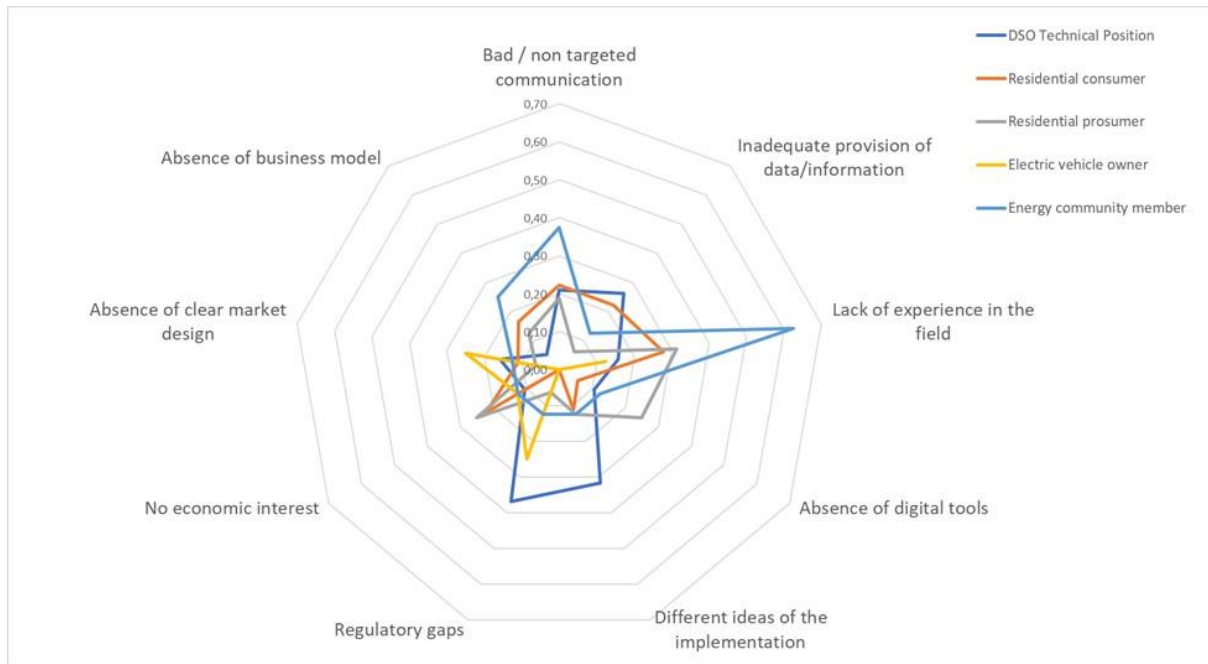


Figure 7: Barriers and hardships of personas

Question 4: Comparison between current and future tasks of personas

The following question was divided into 2 parts where respondents had to first choose the current tasks of stakeholders and then choose the future tasks in a second step. Out of 29 available answers, the 10 most relevant answers remained to be analyzed (a threshold equal 0,25 or higher was chosen if at least one of the personas fulfils the requirement). In Figure 8 the current and the future tasks and activities are displayed. In general, the height of the stacked bar (the sum of current compared to future tasks) indicates the persona’s relevance to tasks. If the bar is higher in the future, this activity or sum of activities are considered more important in the future.

- For the DSO Technician persona, while associated with four tasks, a significant increase in importance is observed in the realm of "Energy flexibility provision" (from 11% to 32%), which many anticipate will gain even more significance in the future. The other three tasks remain relatively constant, though they are numerically more relevant than the "newly identified" tasks.
- Among Residential Consumers, the primary task is "Energy consumption" (56% to 61%), and "Electricity generation" (17% to 29%) is expected to become more important as well.
- The Residential Prosumer persona encompasses tasks such as "Energy consumption" (50%), "Electricity generation" (44%), "Energy flexibility provision" (38%), and "Peer-to-peer trading" (19%). Both of these personas indicate growth for the future.
- Electric Vehicle Owners' primary tasks are "Energy consumption" and "Energy flexibility provision" (both 38%). Except for "Information management" (13% to 25%), there is no noticeable growth in any task. This could potentially indicate missing responses for this particular persona.
- Energy Community Members are currently involved in tasks like "Energy consumption" (63%), "Energy flexibility provision" (63%), "Electricity generation" (50%), and "Energy services provision" (25%). Looking ahead, respondents believe that energy community members will continue performing similar tasks, but with reduced relevance. Notably, this is the only persona among those analyzed that shows a declining task relevance.

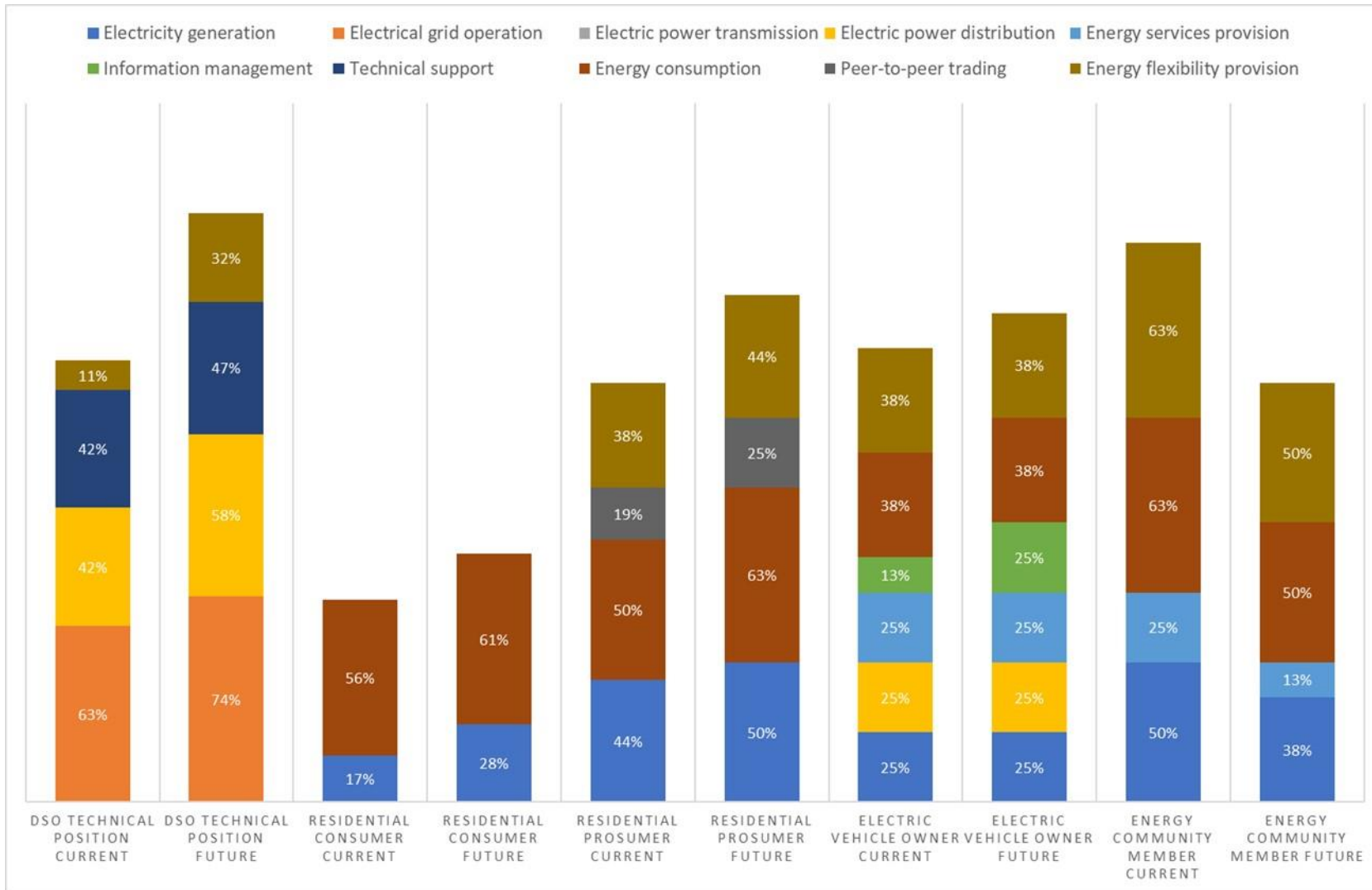


Figure 8: Comparison between current and future tasks of personas

Conclusions

The results show several insights which need to be observed and possibly evaluated further through more responses and further research. The following findings can be highlighted:

- The general willingness to share information with describing a substantial amount of experiences among respondents is high (more than 5 personas per survey were characterized) which can be considered as very positive.
- The results of major drivers/ incentives of chosen personas were very much in line with current literature and don't give very interesting insights. In particular, the chosen personas are driven by economic incentives as well as the "idealistic" value being the protection of the environment.
- When it comes to the best communication means with personas, the energy community members stick out. Face-to-face meetings and co-creation processes play a much bigger role than in any other shown persona. It seems that community members prefer a very personal approach for engagement. It must be noted that the number of responses is still quite low and will need more data to draw robust conclusions.
- The barriers and hardships of personas show - compared to the other questions – lower relevance levels in general. Again, the energy community members offer an interesting insight. The lack of experience in the field is by far the most relevant barrier across all personas.

Indications were observed among all examined personas that they would be undertaking a greater number of tasks in the future energy system. Notably, energy community members were the only group experiencing a reduction in the importance of their tasks. This very issue must be researched further as it seems contradictory to most of the findings in current literature. The great lack of experience of energy community members might be one of the observed reasons for this outcome pointing out that the engagement experiences with such persona has room for improvement.

2.3 Contribution to BRIDGE crosscutting Task Forces and Actions

Besides the four BRIDGE Working Groups, crosscutting Task Forces and Actions have been launched after the 2019 BRIDGE GA to work on specific topics [6].

Platone contributed particularly to the following topics:

- BRIDGE Task Force Future Research and Innovation Priorities (see chapter 2.3.1)
- BRIDGE Task Force Energy Communities (see chapter 2.3.2)
- BRIDGE Joint Communication Taskforce (see chapter 2.3.3)

2.3.1 BRIDGE Task Force Future Research and Innovation Priorities

Project participant: Antonello Monti (RWTH)

Time period: 2020 – 2021

The Task Force "Future Research and Innovation Priorities" was created in the BRIDGE GA in February 2020. The purpose of this GA was to bring together views from ETIP-SNET and BRIDGE communities on R&I priorities (including flexibility/storage, vector/sector integration and digitalisation), to look into concrete achievements from H2020 projects and highlight future R&I needs.

Platone project coordinator Antonello Monti from partner RWTH served as the co-chair of this Task Force. Focus of the work was to analyse the concrete results of the complete set of projects of H2020 represented in BRIDGE to identify gaps and opportunities to be considered for the upcoming Horizon Europe. The work has been summarized in a comprehensive report "Analysis of Projects - Major Achievements and R&I Gaps", published in April 2021 [33].

2.3.2 BRIDGE Task Force Energy Communities

Participants: Ludwig Karg (B.A.U.M.), Ercole de Luca (Areti)

Time period: 2019 – 2023

The BRIDGE Task Force Energy Communities was established following BRIDGE GA in 2019 to investigate existing and upcoming frameworks in various EU countries and to realize how the development could be further facilitated. The Task Force has been charged with preparing reports and

formulating recommendations for the EC on the replicability and upscaling inform on the need for support and on further research and demonstration needs.

The Task Force was chaired by Ludwig Karg from consortium partner B.A.U.M. representing Platone (and other) projects together with Leen Peters from ThinkE. The Task Force closely cooperates with a respective WG “Consumer and Citizen Involvement” and Taskforce of the Joint Programming Platform ERA-Net Smart Energy Systems (JPP SES) [36] that operates “expera”, the digital knowledge sharing platform [37]. Surveys have been created with BRIDGE and JPP SES projects to collect examples of Energy Communities, identify the support needs to develop structures for Energy Communities, and understand better the regulatory conditions and tariff specifics in EU countries.

In April 2020, a webinar entitled as “CEER meets BRIDGE Task Force Energy Communities”, and agreed upon on during the BRIDGE 2020 GA, was organized to encourage discussions on the link between the topics discussed in the BRIDGE Taskforce and regulatory issues. A documentation of the webinar is available online [29].

In April 2021, the report “Economies of Energy Communities - Review of electricity tariffs and business models” was published focussing on the economic aspect of Energy Communities, looking at two parts: Firstly electricity tariffing, with focus on a potential link between the implementation of a local flexibility market and energy communities and encouraging increase share of renewable energy generation through energy communities; and secondly on business models and services offered by energy communities and wider collective energy actions across the EU [34].

2.3.3 BRIDGE Joint Communication Taskforce

Participants: Janina Katona, Kristin Petersen (B.A.U.M.)
Time period: 2020 – 2021

This Task Force was created with the aim for the collaboration of projects in 2020 with a focus on communication activities to be handled by the task force of Joint Communication and to establish proper communication with the project’s coordinators and communication managers. The main focus of this Task Force was on supporting BRIDGE projects participation 2020 in Enlit Europe (the former European Utility Week), Smarter E and European Sustainability Week (EUSEW) [38].

Platone participated in the Task Force and contributed to events and dissemination opportunities, e.g. by contributing to the BRIDGE newsletters, coordinated by the Task Force (see chapter 2.4.2 as well).

2.4 Contribution to further BRIDGE Activities

2.4.1 Contribution to BRIDGE Events

Platone was present at all organized BRIDGE GAs during the project lifetime: BRIDGE GA 2020, 11-12 February, Brussels [13], BRIDGE GA 2021, 2-4 March, online [39], BRIDGE GA 2021, 2-4 March, online [38] and BRIDGE GA 2023, Brussels/hybrid. E.g., at the BRIDGE GA 2021 project coordinator Prof. Antonello Monti from RWTH presented Platone interim results. Partners of the Platone project that have been actively involved in the activities of the BRIDGE WGs, were involved in GA’s sessions related to the work of the dedicated WG. E.g., at the BRIDGE GA 2021 partners involved in activities of the WGs and Task Forces HEMRM or the BRIDGE repository for use-case joined the related sessions.

On 20 June 2023, Platone project coordinator Antonello Monti from RWTH, took part in a panel on achievements during the final BRIDGE & ETIP SNET event “ETIP SNET & BRIDGE Key results and steps forward” as representative of the ETIP SNET WG4 & BRIDGE Data Management WG [40].

2.4.2 Contribution to BRIDGE Joint Dissemination Activities

Platone was present in events of Enlit Europe coordinated with the BRIDGE Joint Communication Team:

Enlit Europe 2021, 30 November - 2 December

- On-site participation at the EU project zone, Milan, Italy.
- EU project zone Live Hub “Interoperability and data exchange to support digitalisation”, partner ENG, Ferdinando Bosco, 1 December 2022.

Enlit Europe 2022, 29 November - 1 December

- On-site participation at the EU project zone, Frankfurt, Germany.
- EU project zone's Live Hub Session "Renewable and Storage", partner E.DSO, Selene Liverani, 30 November 2022.

2.4.3 Contribution to BRIDGE Communication Materials

Platone continuously contributed to the BRIDGE Newsletter during the project lifetime:

- BRIDGE Newsletter #8, December 2019: News item "Platone" [41]
- BRIDGE Newsletter #9, June 2020: News item on the topic "HEMRM" [42]
- For the reissue of the BRIDGE newsletter, three further contributions were submitted but not published:
 - Q2/2021: SOGNO Platform architecture used by Platone accepted in Linux Foundation Energy
 - Q2/2021: Successful first H2020 ES-1 interproject workshop
 - Q1/2022: SOGNO project Linux Foundation
- BRIDGE Newsletter June 2023: News item "Platone Final Conference "Digitalize DSOs to Unlock Flexibility" [43]
- BRIDGE Newsletter July 2023: News item "Flex Community: edgeFLEX, FEVER and Platone" [44]

Additionally, Platone contributed to "The BRIDGE initiative and project fact sheets", published in June 2020 with a fact sheet on Platone [45].

3 Conclusion

The Platone philosophy fully respects and synthesises all the ongoing initiatives at EU level on demand side flexibility and related market regulation provisions, tendencies and discussions.

Because each H2020 project like Platone initially works only within its own framework and the project's description of work, the participation to BRIDGE greatly benefits the project: It aligns and broadens perspectives with the work done in other projects and discuss topics not foreseen in the project's description of work. The structure that BRIDGE permits not only to share experiences but jointly develop approaches further in a structured manner. Regular meetings and precise requests for inputs allows to keep a focussed discussion and permits an effective use of resources.

For future projects, it may be helpful to formulate more clearly the expectations from the BRIDGE working groups to the projects as well as the expectations of the projects to BRIDGE in order to better plan the effort of the contributions to BRIDGE.

Above the work in the BRIDGE WGs, Task Forces and Actions being part of this BRIDGE community offered several ways and paved paths for further cooperations. Examples are:

- The setup of the so called FlexCommunity, initiated by Platone with sister projects FEVER and edgeFlex 2022 with more than 150 members and two successful annual conferences up to now [46],
- The interproject cooperation of the projects funded under the same H2020 ES-1-2019 on "Flexibility and retail market options for the distribution grid" resulting in several workshops with great knowledge sharing [47][48],
- Participating in the BD4NRG [49], BRIGHT [50] and Storie&Go [51] projects, resulting in a multi-project contribution and collaboration with Platone with focus on discussing and exploring the opportunities to scale up models from these projects,
- Building special synergies with the projects EUniversal [52] and Platoon [53], resulting in a technical workshop and cross-participation in the advisory boards,
- The Stakeholder Characterization Survey [32] as an outcome of the CCE WG with a participation far beyond the BRIDGE network providing interesting insights into the experiences of engaging with people working together on flexible energy system topics and reached people far beyond the academic BRIDGE network.
- The jointly operated knowledge platform for the Task Forces on Energy Communities as a first step for cooperation on EU or member state levels, foreseen with the European Interconnection for Research Innovation & Entrepreneurship (EIRIE) knowledge platform that is being built up on the Pantera project [54][55].
- The synergies between ETIP SNET WG on Digitalisation of the Electricity System and Customer Participation and the BRIDGE WG on Data Management [40].
- Sessions on cooperations at events and workshops, e.g., at the Platone midterm conference in 2021 [56], the FlexCommunity Conferences 2022 and 2023 [46] or the Platone final conference in 2023 [57].

It is hoped that the BRIDGE initiative is successful in bringing together more effectively the results of the projects at the BRIDGE level helping the projects reaching a new level of knowledge sharing and generation. Finally and more importantly, it is hoped that with the structure of BRIDGE, the results jointly developed by the projects will remain available beyond the individual duration of the projects and that the findings will find their way into the design of new projects, initiatives and programmes.

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7 List of Abbreviations

Abbreviation	Term
ACER	Agency for the Cooperation of Energy Regulators
ADB	Advisory and Dissemination Board
CCE	Consumer, and Citizen engagement
CEER	Council of European Energy Regulators
CIM	Common Information Model
DEMI	Distributed Energy Management Initiative (Canada)
DG ENER	Directorate-General Energy
DSO	Distribution System Operator
EC	European Commission
EIRIE	European Interconnection for Research Innovation & Entrepreneurship Platform
ENTSO-E	European Network of Transmission System Operators - Electricity
ERA-Net	European Research Area Network
ETIP SNET	European Technology and Innovation Platform Smart Networks for Energy Transition
ETP	European Technology Platform
EU	European Union
GA	General Assembly
H2020	Horizon 2020 - Funding programme of the European Commission
HEMRM	Harmonised Electricity Market Role Model
R&I	Research and Innovation
RDI	Research, Development and Innovation
SGAM	Smart Grid Architecture Model
TSO	Transmission System Operator
WG	Working group
WP	Work package